

MONTHLY NOTICES  
OF THE  
ROYAL ASTRONOMICAL SOCIETY.

VOL. XXXIV.      *February 13, 1874.*

No. 4.

PROFESSOR CAYLEY, F.R.S., President, in the Chair.

George Creaser, Esq., Meltham, Huddersfield, and  
Arthur Edward Donkin, Esq., Exeter College, Oxford,

were balloted for and duly elected Fellows of the Society.

*Report of the Council to the Fifty-fourth Annual General Meeting of the Society.*

Progress and present state of the Society:—

	Counting days	Annual	Non-resident	Abroad, and otherwise, and removals, and mortality	Total	Associates	Counted Total
December 31, 1872	193	321	9	2	525	48	573
Since elected	... + 8	+ 23	...	...	...	...	...
Deceased	... - 6	- 6	- 1	...	...	...	- 2
Removals	... + 2	- 2	...	...	...	...	...
Resigned, &c.	... ...	- 11	...	...	...	...	...
December 31, 1873	197	325	8	2	532	46	578

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*Mr. Whitbread's Account as Treasurer of the Royal*

## RECEIPTS.

		£	s.	d.	£	s.	d.
Balance of last year's account	...	...	...	...	428	8	0
By Dividend on £3,600 Consols	...	...	...	53 2 0			
„ „ £5,200 New 3 per Cents.	...	...	76 14 0				
„ „ £3,600 Consols	...	...	53 6 6				
„ „ £5,200 New 3 per Cents.	...	...	77 0 6				
Received for arrears of contributions	...	...	...	132 .0 0	260	3	0
„ 186 Annual contributions	...	...	390 12 0				
„ 24 Admission fees	...	...	50 8 0				
„ First year's contributions	...	...	30 9 0				
„ 8 compositions	...	...	...		603 9 0		
„ Sale of publications at the Rooms of the Society	...	...	...	33 7 6	168 0 0		
By Messrs. Williams and Norgate	...	...	...	33 4 0			
		66 11 6					
		£1,526 11 6					

*Astronomical Society, from Dec. 31, 1872, to Dec. 31, 1873.*

EXPENDITURE.

Salaries:—

			£	s.	d.	£	s.	d.
Editor of Monthly Notices	...	...	60	0	0			
Assistant Secretary	...	...	130	0	0			
Commission on Collecting	...	...	31	17	0			
						221	17	0

Taxes:—

Land and Assessed	...	...	...	8	18	11		
Poor Rate	...	...	...	13	6	4		
Other Rates	...	...	...	5	17	6		
							28	2
								9

Bills, &c.:—

Strangeways, printer	...	...	...	360	19	1		
Rev. C. Pritchard, Sir J. Herschel's Catalogue				30	0	0		
Wesley, engraver	...	...	...	85	0	0		
Whiteman „	...	...	...	18	10	0		
Pound „	...	...	...	38	2	6		
Malby	...	...	...	60	0	10		
Browning, instruments	...	...	...	14	5	3		
L. Wyon, medals	...	...	...	57	15	0		
Sun Fire Office Insurance	...	...	...	7	15	6		
							672	8
								2

Miscellaneous:—

House expenses	...	...	...	23	7	0		
Stamps and postages	...	...	...	62	4	10		
Books and parcels	...	...	...	4	7	6		
Expenses of evening meetings	...	...	...	13	13	0		
Waiters attending	...	...	...	3	17	0		
Coals and wood	...	...	...	12	0	0		
Gas	...	...	...	5	5	1		
Repairs	...	...	...	2	3	0		
Sundries	...	...	...	12	4	3		
Bankers' commission on cheques	...	...	...	0	1	2		
							142	1
								4
Mrs. Jackson Gwilt's annuity	...	...	...				8	18
								2
Balance at Bankers' ...	...	...	...				1,073	7
								5
							453	4
								1
							£1,526	11
								6

Examined and found correct,

HENRY PERIGAL,  
C. G. PRIDEAUX, } Auditors.

Assets and Present Property of the Society, January 1,  
1874:—

	£ s. d.	£ s. d.
Balance at Bankers' ... ... ... ... ..... 453 4 1		
3 Contributions of 9 years' standing ... ... 56 14 0		
1 " 8 " ... ... 16 16 0		
9 " 7 " ... ... 132 6 0		
4 " 6 " ... ... 50 8 0		
4 " 5 " ... ... 42 0 0		
5 " 4 " ... ... 42 0 0		
14 " 3 " ... ... 88 4 0		
28 " 2 " ... ... 117 12 0		
38 " 1 " ... ... 79 16 0		
Balances of several Accounts ... ... 14 14 0		
	640 10 0	
Due for Publications ... ... ... ..... 1 9 0		
£5,200 New 3 Per Cents (including Mrs. Jackson Gwilt's Gift, £300).		
£3,600 Consols, including the Lee Fund (£100) and Turnor Fund (£500).		
Unsold Publications of the Society.		
Various astronomical instruments, books, prints, &c.		
Balance of Turnor Fund (included in Treasurer's Account) ... 197 1 9		

Stock of volumes of the *Memoirs*:—

Vol.	Total	Vol.	Total	Vol.	Total
I. Part 1	8	XIV.	386	XXIX.	443
I. Part 2	48	XV.	170	XXX.	292
II. Part 1	66	XVI.	195	XXXI.	170
II. Part 2	30	XVII.	168	XXXII.	198
III. Part 1	82	XVIII.	173	XXXIII.	203
III. Part 2	101	XIX.	178	XXXIV.	188
IV. Part 1	99	XX.	176	XXXV.	156
IV. Part 2	101	XXI. Part 1	216	XXXVI.	242
V.	121	XXI. Part 2	100	(with M. N.)	
VI.	147	XXI. (together).	85	XXXVI. (without)	24
VII.	171	XXII.	178	XXXVII. Part 1	307
VIII.	157	XXIII.	173	XXXVII. Part 2	321
IX.	160	XXIV.	179	XXXVIII.	320
X.	169	XXV.	193	XXXIX. Part 1	385
XI.	159	XXVI.	196	XXXIX. Part 2	407
XII.	186	XXVII.	453		
XIII.	195	XXVIII.	411		

The instruments belonging to the Society are as follow :—

The *Harrison* clock,  
 The *Owen* portable circle,  
 The *Beaufoy* circle,  
 The *Beaufoy* transit,  
 The *Herschelian* 7-foot telescope,  
 The *Greig* universal instrument,  
 The *Smeaton* equatoreal,  
 The *Cavendish* apparatus,  
 The 7-foot Gregorian telescope (late Mr. Shearman's),  
 The Variation transit (late Mr. Shearman's),  
 The Universal quadrant, by Abraham Sharp,  
 The *Fuller* theodolite,  
 The Standard scale,  
 The *Beaufoy* clock, No. 1,  
 The *Beaufoy* clock, No. 2,  
 The *Wollaston* telescope,  
 The *Lee* circle,  
 The *Sharpe* reflecting circle,  
 The *Brisbane* circle,  
 The *Baker* universal equatoreal,  
 The *Reade* transit,  
 A Sextant formerly belonging to Capt. Cook,  
 A Globe for showing the Precession of the *Equinoxes*.

The *Sheepshanks'* collection of instruments, viz.,—

1. 30-inch transit by Simms, with level and two iron stands.
2. 6-inch transit theodolite, with circles divided on silver; reading microscopes, both for altitude and azimuth; cross and siding levels; magnetic needle; plumbline; portable clamping foot and tripod stand.
3.  $4\frac{6}{10}$ -inch achromatic telescope, about 5 feet 6 inches focal length; finder, rack motion; two other micrometers; one terrestrial and ten astronomical eyepieces, applied by means of two adapters, with equatoreal stand and clock movement.
4.  $3\frac{1}{4}$ -inch achromatic telescope, with equatoreal stand; double-image micrometer; one terrestrial and three astronomical eyepieces.
5.  $2\frac{3}{4}$ -inch achromatic telescope, with stand; one terrestrial and three astronomical eyepieces.
6.  $2\frac{3}{4}$ -inch achromatic telescope, about 30 inches focus; one terrestrial and four astronomical eyepieces.
7. 2-foot navy telescope.
8. 45-inch transit instrument, with iron stand, and also Y's for fixing to stone piers; two axis levels.
9. Repeating theodolite, by Ertel, with folding tripod stand.
10. 8-inch pillar-sextant, divided on platinum, with counterpoise stand and horizon roof.
11. Portable zenith instrument, with detached micrometer and eyepiece.

12. 18-inch Borda's repeating circle, by Troughton.
13. 8-inch vertical repeating circle, with diagonal telescope by Troughton and Simms.
14. A set of surveying instruments, consisting of a 12-inch theodolite for horizontal angles only, with extra pair of parallel plates; tripod staff, in which the telescope tube is packed; repeating table; level collimator, with micrometer eyepiece; and Troughton's levelling staff.
15. Level collimator, plain diaphragm.
16. 10-inch reflecting circle, by Troughton, with counterpoise stand; artificial horizon, with metallic roof; two tripod stands, one with table for artificial horizon.
17. Hassler's reflecting circle, by Troughton, with counterpoise stand.
18. 6-inch reflecting circle, by Troughton, with two counterpoise stands, one with artificial horizon.
19. 5-inch reflecting circle, by Lenoir.
20. Reflecting circle, by Jecker, of Paris.
21. Box sextant and 3-inch plane artificial horizon.
22. Prismatic compass.
23. Mountain barometer.
24. Prismatic compass.
25. 5-inch compass.
26. Dipping needle.
27. Intensity needle.
28. Ditto ditto.
29. Box of magnetic apparatus.
30. Hassler's reflecting circle, with artificial horizon roof.
31. Box sextant and  $2\frac{1}{4}$ -inch glass plane artificial horizon.
32. Plane speculum artificial horizon and stand.
33.  $2\frac{1}{2}$ -inch circular level horizon, by Dollond.
34. Artificial horizon roof and trough.
35. Set of drawing instruments, consisting of 6-inch circular protractor; common ditto; 2-foot plotting scale; two beam compasses and small T square.
36. A pentagraph.
37. A noddy.
38. A small Galilean telescope, with the object-lens of rock-crystal.
39. Six levels, various.
40. 18-inch celestial globe.
41. Varley stand for telescope.
42. Thermometer.
43. Telescope, with the object-glass of rock crystal.

To these must be added the following instruments, which had been employed in the Observations of the Total Solar Eclipse of 1870, and which, by a resolution of the joint Eclipse Committee of 1870, were transferred to the Royal Astronomical Society:—

Portable equatoreal stand,  
Portable altazimuth tripod,  
Four polarimeters,  
Two Biquartz and Nicol's prisms,  
Registering spectroscope, with prism,  
Camera and chemicals, in box,  
Two five-prism spectrosopes,  
Cradle for telescope,  
Eight-inch reflector and stand,  
Spectroscope,  
A small box, containing—  
Three square-headed Nicol's prisms,  
Two Babinet's compensators,  
Two double-image prisms,  
Three Savarts,  
One positive eye-piece, with Nicol's prism,  
One dark wedge.

These are now in the apartments of the Society, with the exception of the following, which are lent, during the pleasure of the Council, to the several parties under mentioned, viz.:—

The *Fuller* theodolite, to the Director of the Sydney Observatory.

The *Beaufoy* transit, to the Observatory, Kingston,  
Canada.

The Sheepshanks instrument, No. 2, to Mr. Huggins.		
Ditto	ditto	No. 4, to Rev. C. Lowndes.
Ditto	ditto	No. 5, to Mr. Birt.
Ditto	ditto	No. 6, to the late Rev. J. Cape.
Ditto	ditto	No. 8, to Rev. C. Pritchard.
Ditto	ditto	No. 9, to the Director of the Sydney Observatory.
Ditto	ditto	No. 41, to Rev. C. Pritchard.
Ditto	ditto	No. 43, to Mr. Huggins.

## The 6-inch circular protractor, to Mr. Birt.

## Tripod stand. Mr. Chambers.

Lent on account of the Eclipse Expedition:—

One polarimeter. Mr. Ranyard.

One ditto. B. A. Eclipse Committee.

One Biquartz and Nicol's prism. Mr. Ranyard.

Camera and chemicals, in box. B. A. Eclipse Committee.

One five-prism spectroscope. B. A. Eclipse Committee.

One ditto Mr. Lockyer.

Cradle for telescope. Mr. W. A. Harris

*The Gold Medal.*

The Council have awarded the Gold Medal of the Society to Professor Simon Newcomb, for his researches on the Orbits of *Neptune* and *Uranus* and other contributions to mathematical astronomy. The President will explain the grounds of this award in the usual manner, before the close of the meeting.

*Printed Transactions of the Society.*

Although no addition has been made to the published volumes of *Memoirs* since the last anniversary, yet two very important volumes are in progress, and they will probably appear during the ensuing year. Volume XL. will contain the valuable posthumous Catalogue of Double Stars collected from all available sources by Sir John Herschel, the manuscript of which was bequeathed by him to the Society. The Catalogue has been prepared for the press, including the calculation of the precession for each star, under the supervision of a committee consisting of Professor Pritchard and the Radcliffe Observer, both of whom have reported favourably on the value of the work.

Volume XLI. of the *Memoirs* is intended to be devoted solely to a discussion and classified arrangement of the observations of solar eclipses which have occurred from 1842 to 1871. The preparation of this volume has been undertaken, at the request of the Council, by the Astronomer Royal, who has been ably assisted in the details of the preparation for the press by Mr. Ranyard.

The last volume of the *Monthly Notices* is the largest that has ever appeared. It clearly exhibits the general activity of the Society during the past year, as well as the progress of astronomical science. Several of the papers are of more than usual interest, and more than the ordinary number of plates illustrate some of the more important. The valuable charts of the transits of *Venus* of 1874 and 1882, drawn by Mr. Proctor, may be specially referred to. These show the lines of equal acceleration and retardation of ingress and egress, and also the lines of equal duration for internal contact in 1874, and for external contact in 1882. An interesting series of drawings of *Mars* and *Jupiter*, by Mr. Knobel, is inserted in the June number. Some beautiful drawings of *Jupiter*, exhibited at one of the evening meetings by the Earl of Rosse, have since been chromo-lithographed at his expense, and the use of the stone has been kindly offered by him to the Society. The Council therefore hope to insert a copy of this valuable plate in the March number of the *Monthly Notices*.

*The Society's New Rooms in Burlington House.*

The Council had expected that the Society would have been in possession of their new rooms in Burlington House in time

for this anniversary meeting. Many unforeseen causes for delay, however, have occurred ; but the Council have now been assured by Mr. Barry, the architect, that in April next the decorations and fittings of the rooms will be completely finished. As a question of prudence, as well as of convenience, it will be probably thought necessary to defer the migration of the Society from Somerset House till the conclusion of the present session. This will give time for the walls to become perfectly dry, especially in the basement, and thus the rooms will be made more habitable for the Assistant-Secretary. It may be as well to record that the entrance to the rooms is the first door on the left hand on entering the quadrangle from Piccadilly.

## OBITUARY.

The Council have to deplore the loss by death of the following Fellows and Associates since the last Anniversary :—

Fellows :—Rev. Temple Chevallier, B.D.  
 F. H. Elliott, Esq.  
 Rev. George Fisher, F.R.S.  
 D. A. Freeman, Esq.  
 R. W. S. Lutwidge, Esq.  
 William Mann, Esq.  
 J. R. M'Clean, Esq., M.P., F.R.S.  
 Rev. Jacob Morton.  
 Frank Robertson, Esq., late Royal  
     Madras Engineers.  
 Sir David Salomons, Bart., M.P.  
 J. Stanistreet, Esq.

Associates :—Dr. Giovan B. Donati.  
 Comm. M. F. Maury.

The Rev. TEMPLE CHEVALLIER, Canon of Darham, and lately Professor of Mathematics at the University in that city, died at the Vicarage, Harrow Weald, the residence of his son-in-law, the Rev. R. J. Knight, on November 4, 1873. He had just entered his eightieth year, having been born at Badingham, in Suffolk, on October 19, 1794. The family from which he was descended was of French origin, having left France for Jersey in consequence of the troubles of the sixteenth century, and proceeded thence to England. The first of the family who settled in England was one Rudolph Chevallier. It is recorded of him in one of Cranmer's letters that he assisted Tremellius, the friend of Calvin, in reading Hebrew Lectures at Cambridge ; for which he had a grant to be a "free denisen, and to enjoy the advowson of a prebend in Canterbury." The grant was dated in August 1552. He is said to have been tutor to the Princess Elizabeth, afterwards Queen. It is certain that in her reign he was